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ALL TERRAIN VEHICLES AND TRAILBIKES IN THE FOREST

- A MANAGEMENT APPROACH -

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TITLE: All Terrain Vehicles and Trailbikes in the Forest - A Management Approach

ABSTRACT: This project develops a philosophy for managing trailbikes and ATVs (All Terrain Vehicles) not licensed for use on highways in the State of California. This philosophy is based upon caring for our natural resources while providing recreational opportunities for ATV and trailbike users. The paper also makes recommendations for managing this use on the San Bernardino National Forest and offers suggestions on implementing the new policies. It suggests modifications of other resource activities to make them more compatible with ATV and trailbike use and to minimize conflicts.

EXECUTIVE SUMMARY

For purposes of this paper the term Off Highway Vehicle (OHV) will refer only to ATVs (All Terrain Vehicles) and trailbikes. Although much of the philosophy and management recommendations would apply to other types of OHVs, they are not part of this study.

Trailbike and ATV use of the San Bernardino National Forest increased dramatically in the late 1970's and 1980's. The Forest OHV Plan allowed use of the Forest road system but provided very few other opportunities. Users, not satisfied with the opportunities offered, turned to illegal activities, causing unacceptable damage to soils, plants and wildlife. Reduced funding and fewer personnel exacerbated the problem.

The Arrowhead Ranger District experimented with the construction of some trails designed specifically to meet experiences desired by ATV and trailbike users. This, coupled with rehabilitation of damaged areas and more aggressive management, reduced negative impacts in the immediate area. Forestwide, however, OHV conflicts continued to increase. OHV management was identified by the public as the number one issue when the Draft Land and Resource Management Plan was released. A series of workshops in the summer of 1987 failed to resolve the issue, but did provide better understanding between opposing factions.

Early OHV literature advocated restricting OHVs to specific areas where users would be allowed to ride where they pleased. These areas were sometimes referred to as "sacrifice areas". The general feeling was OHV users would not stay on designated routes and could not be controlled. More recent literature and experiences on several National Forests indicate when trails are properly designed, users will stay on them.

This paper advocates an OHV management philosophy best illustrated by a triangle: one side representing opportunities, the second side representing restrictions on use, and the third side representing education and law enforcement. Like the fire triangle after which it is patterned, if one side is missing, OHV management is ineffective.

It is not possible to meet all the different desires of ATV and trailbike users on the San Bernardino National Forest. The Forest goal should be to provide those opportunities best fitting a forest environment. This goal can be met by providing a challenging, integrated OHV trail system. User groups have identified well designed trails as their biggest need. There was almost no support for open areas and these should not be provided. The trail system should provide short loop trails for users who want to remain around a central area and longer trails for those wishing to travel greater distances.

Forest roads, not designated as part of this system, should be restricted to vehicles and drivers licensed for operation on State highways. Sensitive areas should be avoided where possible and special mitigation measures taken when they cannot be avoided. OHV and other resource activities need to be coordinated and management practices modified to avoid conflicts. Use can be

controlled through providing a well designed trail network and a combination of fencing, signing and patrol.

User education should be emphasized both on the forest and prior to visiting the forest. Users can be involved in this effort through programs such as the Volunteer Host Program and cooperation with the Motorcycle Industry Council regarding news releases and dealership participation. More employees, knowledgeable and proficient in the use of ATVs and trailbikes, are needed in the field. When education and administration are not effective, an appropriate level of law enforcement must be provided.

It is my belief, with the cooperation and support of the OHV community, an effective OHV program can be developed and implemented. The primary source of funding for this program will be the State Green Sticker program for OHVs.

I. INTRODUCTION (BACKGROUND)

For purposes of this paper the term Off Highway Vehicle (OHV) will refer only to ATVs (All Terrain Vehicles) and trailbikes. Although much of the philosophy and management recommendations would apply to other types of OHVs, they are not a part of this study.

The San Bernardino National Forest is located in San Bernardino and Riverside Counties in the State of California next to one of the most rapidly expanding metropolitan areas in the country. The population is highly diverse and readily embraces new ideas and changing technology. This relationship leads to heavy impacts on the forest from both traditional and non-traditional uses.

The San Bernardino National Forest Off-Highway Vehicle (OHV) Plan was developed in 1976 in response to Executive Order 11644 and 36 Code of Federal Regulations 295. The Plan established two small open areas (5 acres and 50 acres) and a number of closed areas. The bulk of the Forest was placed in a restricted use category. OHV use was allowed on designated motorcycle trails and all Forest System roads open to public use and designated by a road number. Vehicles and drivers were also required to abide by all State laws.

In 1976, most of the OHV use was by 4-wheelers and motorcyclists. Most users were generally familiar with the National Forest and somewhat knowledgeable about natural resources although they didn't always follow the regulations. However, the marketing of ATVs as recreational vehicles and technological developments in trailbikes led to a different type of use and a new user of the National Forest. This user was from urban areas and had purchased a new toy. As urban law enforcement agencies closed off areas in the cities, the users were driven to the deserts or the mountains. Many had little if any knowledge of natural resources. They typically travelled as families or small groups and did not belong to any existing OHV organizations. A second new category of user developed in mountain communities: teenagers who drove ATVs or trailbikes directly from their residence or mountain cabin into the forest. This activity created numerous unauthorized trails. The activity peaked during after school hours and during vacation periods.

The State of California began to regulate OHVs with the passage of the Off-Highway Vehicle Act in 1972. Vehicles not registered for highway use had to be registered either for off-highway use (with a Green Sticker) or for closed circuit use (with an transportation sticker.) Registration fees and a percentage of the gasoline tax were placed in a special fund to be used to provide for and administer OHV opportunities (commonly referred to as the Green Sticker Fund). Between fiscal year 1979-80 and 1988-89, a total of $16,853,450 has been awarded to the Forest Service in California of which the San Bernardino National Forest has been granted $755,660. Recent legislation extending the program to 1993 places greater emphasis on environmental protection and now requires that 33 percent of these funds be used for conservation activities and law enforcement. As of July 1, 1988 ATV safety training organization operators and instructors will have to be licensed by the Department of Motor Vehicles. There are now regulations for minors governing use of safety helmets, parental supervision, and the need for safety training. Carrying a passenger on ATVs is now prohibited.

Effectiveness of on-the-ground management and administration of OHVs deteriorated from the late 1970's into the early 1980's as a result of increased ATV and trailbike use. ATVs began to speed on forest roads and use cut banks to "slingshot" their vehicles across the roads resulting in safety conflicts with other vehicles. Users of machines shown on TV and in magazine ads as being capable of traveling cross country, climbing 50 percent slopes, running through streams and so forth, were not content to stay on forest roads and the few motorcycle trails available for use. They left the roads to practice "donuts", construct motorcross tracks or merely to test their skills and the capabilities of their machines. The results were conflicts with other forest users and unacceptable resource damage to soils, sensitive plants, tree plantations, wildlife and water quality. When efforts were made to close motorcross tracks and stop other types of illegal use, the problem simply moved to another location.

During the same time, budgetary cuts reduced the number of field personnel. The San Bernardino National Forest's interpretive and environmental education programs were cut, then eliminated, reducing the likelihood of reaching and educating the new forest user. The position of Forest Public Affairs Officer was left vacant, further reducing the ability of the Forest Service to reach the public. Three types of management attitudes developed:

1. OHV was recognized as a legitimate use of National Forest System land and a positive approach was taken to meet the needs of the users.

2. OHV activity was viewed as negative and the emphasis was on elimination or control through heavy-handed law enforcement.

3. OHV activity was recognized but largely ignored because of the perceived inability to manage the use.

The State defined smoothly-graded dirt roads as being subject to the Streets and Highways Act requirement for highway registration. Roughly-graded roads can be traveled by vehicles with a greensticker registration. The State Code confused the issue by exempting logging roads, fire trails and service roads from highway licensing. Additional confusion arose over roads graded once a year for fire access which are smoothly graded in the summer but roughly graded during other parts of the year. Confusion developed over what the Forest OHV Plan said. Some districts interpreted the Plan to say all Forest Service roads were open to green stickered vehicles. Others said the roads are graded, therefore subject to the State vehicle code requiring vehicles to be licensed for highway use. Enforcement varied from one district to the next. This issue was finally resolved in 1987 by the determination that OHVs could use all Forest System roads not closed to their use by Forest order. Some roads in the Big Bear/Holcomb Valley area of the forest were closed by forest order because of safety problems resulting from the dual use of regular passenger vehicles and OHVs.

As conflicts increased, polarization occurred. A "love 'em" or "hate 'em" reaction became common. Emotions ran high. Some people felt the Forest Service was not fulfilling its responsibilities for protecting the natural resources of the Forest and pushed for a total ban on OHVs. On the other hand, user groups felt there was an agency bias against OHVs and fought any attempt to restrict or confine use.

The Arrowhead Ranger District began to experiment with the management of ATVs and motorcycles. It applied for and received State Green Sticker Funds to reconstruct a trail to provide a new opportunity for ATVs and trailbikes. At the same time, the District began to use fencing to close off and rehabilitate areas of illegal use. It purchased ATVs and trailbikes to utilize in the administration of OHVs rather than relying on standard pickups and 4-wheel drive wagons. The positive action of providing a better opportunity in the targeted area, while at the same time closing off illegal activities in the area, resulted in a dramatic improvement in compliance with rules and regulations in the targeted area. User groups accepted the design of the trails and pushed for additional trail construction but wished to retain use of all of the existing dirt road system. Non-users opposed all new construction because there was inadequate control over existing illegal use and they were were concerned that new construction would open additional areas to environmental damage.

The Draft Land and Resource Management Plan was published in the summer of 1986. More comments were received about OHVs than any other issue. About 80 percent of the comments were against OHVs. The number one area of dispute was a proposed cross-forest trail. There was nothing in the way of consensus or apparent areas of compromise. The responses were totally polarized.

In the summer of 1987, a series of OHV workshops were held over a period of eight weeks. Invitations to participate were sent to the entire Land Management Plan mailing list. Sixty-two people actually participated. The major area of agreement was the need for better education. Current efforts were felt to be totally inadequate. Although agreement on other issues wasn't possible, the meetings did help to clarify the positions of the various groups and allowed for better understanding between opposing groups.

In early 1988, because of accidents and safety related concerns, the industry and the Consumers Products Safety Commission agreed not to manufacture or market 3-wheeled ATVs. Unsold 3-wheelers would be removed from the market, but there would be no recall of previously sold ATVs. Quads would continue to be sold. The industry has embarked on an aggressive safety education program.

Statement of Purpose

The purpose of this paper is to develop a philosophy for managing OHVs and to propose a strategy for management of ATVs and trailbikes on the San Bernardino National Forest. The paper will also outline a broad strategy for implementing the OHV Plan upon completion of the Forest Land and Resources Management Plan.

Projections will be made made about future use. Examples will be shown of how other resource activities can encourage undesirable behavior in OHV users and suggestions made on modifications to bring about a more compatible relationship.

Basic Assumptions

OHV use of National Forest System lands is an acceptable use although there are locations where use may be inappropriate.

Although the number of users and type of vehicles may change over time, OHV use of the forest will continue.

OHV conflicts will not go away by themselves and this use must be planned and managed.

II. LITERATURE REVIEW

Literature and research specific to ATVs is limited. Most of the literature is about off-highway vehicles in general, 4-wheel drive vehicles or motorcycles. Since ATVs can use many of the same areas and trails used by motorcycles they are usually lumped with motorcycles or classified as a subgroup of motorcycles. There is little documentation of the separate and distinct needs of ATV users.

Demand

Russell Shay, in his article "ORVs-The Non User Perspective," states "The impact of ORVs on the world of recreation is closely analogous to the impact the automobile has had on transportation. Each opened up new previously unthinkable worlds of possibilities, many of which have turned out to have serious negative implications." The impact of OHVs has occurred primarily within the past twenty years.

An element of the 1982 California Recreation Plan, "Recreation Needs in California," states that Off-Highway vehicle use is not projected to increase at all in the present decade despite an 18 percent growth in population. By the year 2000, OHV use will show an increase of less than 10 percent. This projection is based upon the assumption that the effects of an aging population coupled with the expected increase in average income will cause the greatest growth in nonstrenuous outdoor activities. Strenuous outdoor recreation will grow at a rate somewhat less than the population growth rate. This report did not anticipate the the impact of ATVs on OHV demand.

Wholesale shipments of new ATVs in California rose rapidly after 1979 and peaked in 1984. They then dropped off dramatically through 1987. National retail sales of ATVs increased until 1985 then dropped off by about 28 percent through 1987. National retail sales of 2-wheel OHVs dropped throughout the 1980s.

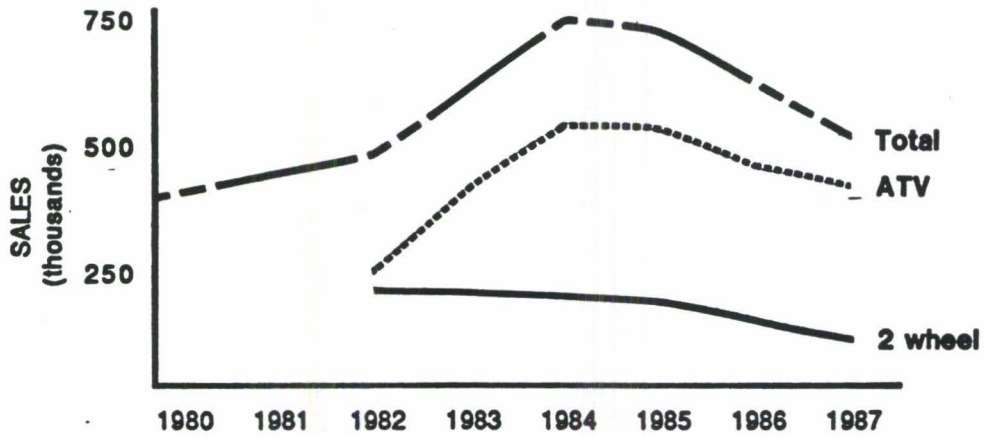


Figure I. Retail sales nationally.

There has been an increase in the number of OHVs in use since 1982 because of the dramatic increase in the sales of ATVs. By 1986 the number of ATVs in use exceeded 2-wheel OHVs in use nationally.

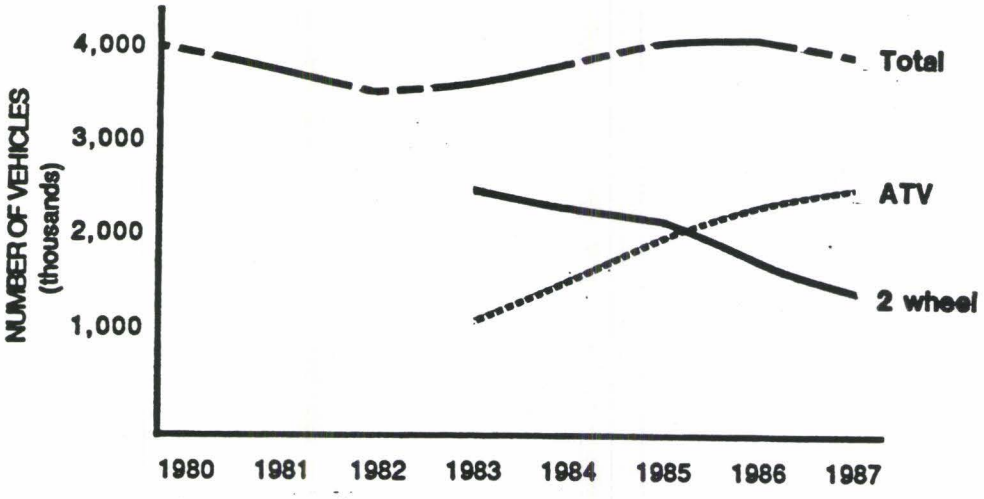


Figure 1. Vehicles in use nationally.

Environmental Impacts

Perceived OHV conflicts with wildlife appear to be more a function of intuitive management expertise and judgement rather than a direct result of systematic problem driven research. What research has been done in the West appears to have been concentrated in desert areas rather than in forested lands. R. B. Bury, in his article "What We Know and Do Not Know about Off-Road Vehicle Impacts On Wildlife," states that quantitative published documentation of OHV impacts on wildlife in western arid lands is scant. Although there seems to be a wealth of information, in fact we know very little given the magnitude of the problem. Research in the California desert indicates OHV activity affects wildlife by:

1. direct damage to soil and vegetation - food and cover.
2. noise harassment of animals - territoriality, courtship, breeding.
3. direct mortality.

Birds are apparently one of the most sensitive of the vertebrates to OHV influence. There is need for research on the impacts to natural communities, especially riparian zones; noise impacts; multiple negative impacts (OHVs coupled with shooting, camping, etc.); degree of concentration of use; and recovery rates if OHV activity is eliminated.

There are more quantitative studies on soil and vegetation than wildlife, but most of the research is still on desert areas rather than forests in the West.

A deer census on the San Bernardino National Forest demonstrated a link between deer density and miles of road and motorized trail. The lower density of deer in motorized areas may be the effect of multiple impacts. Deer have high densities in the motorized areas of Casper Park in Orange County. However in

the Park public use is highly regulated (no shooting, no dogs, no harassment of animals, etc.). There needs to be more research on multiple negative impacts on wildlife.

User Expectations

G. E. Nicholes, in his 1980 article, "Off-Road Vehicle Trends," states that recreation, in and of itself, is a personal, multi-dimensional activity. Motorized vehicle use is a dimensional extension of the individual that encompasses his physical performance. It rewards the participant for his skill and aptitude; further rewards him sociologically by his peers for his involvement; and he gains his own personal psychological growth as he reacts successfully to both positive and negative aspects of his experience. Nicholes breaks users into four groups:

1. one who is learning to operate the vehicle.
2. one who is engaged in play and/or unstructured competition.
3. one who is involved in structured competition.
4. one who uses the vehicle as a tool of transportation to participate in other recreational activities.

It appears doubtful one management procedure would be adequate for all types of vehicle users.

While State Vehicle Recreation Areas (SVRAs) satisfy many OHV user needs, there are other users who have expectations that cannot be satisfied within the confines of an SVRA. Joe Wernex, in his "Guide To Off-Road Motorcycle Trail Design And Construction," states that trailbike enthusiasts require considerable trail mileage for a day's outing. Expert riders may want to travel over 100 miles in a day. Trails should include features that enhance the trail experience with an emphasis on variety. Trail systems should be designed to form multiple loops so riders do not have to double back. The challenge is to provide trail users with a high quality recreational experience while at the same time minimizing the potential impacts of motorized vehicles in a forest setting.

The Motorcycle Industry Council's 1985 ATV Owner Survey reveals that in the West 71 percent of the respondents listed forests or woods as the most popular area of use. The next most popular area was the desert or sand dunes (61 percent). Users are willing to travel to gain the desired experiences. Users traveled about 30 miles to get to use areas for one day use and 100 miles for overnight trips to use areas. The average distance traveled off-highway in a day is 31 miles in the West with 75 percent of the annual mileage driven by recreational ATV users occurring on weekends. The average user in the West was 33 years old and married. Seventy-three percent of the owners previously owned a motorcycle. Dirt Wheels and 3 Wheeling were the most popular magazines.

William J. Kochelman, in "Environmental Effects Of Off-Road Vehicles," finds that "Most ORV users like hilly and rolling terrain, which provides a diverse spectrum of features to challenge their skills." The endurance rider usually uses the machine as an end in itself rather than as a means to an end.

Many users participate in OHV activities as families. Ed Waldeim, in an article in the CORVA NEWS on what off-roading means to him and his family, uses phrases like "bringing families together," "responsibility, coordination, team work, and family unity," and "share and express the feelings and accomplishments of each participant."

Opportunities

Much of the earlier literature recommends the segregation of OHV activities into what are sometimes called "sacrifice areas". These areas are generally perceived to be devoid of vegetation, dusty, damaged and eroding, with the only attempt to control environmental impacts being to contain soil movement within the facility. The reason normally given for this policy is that when the use is spread out there are more conflicts with other recreationists and it is much harder or impossible to control the use. Kochelman, in "Environmental Effects Of Off-Road Vehicles," states "A consideration of the goals of management practices for ORVs must begin by recognizing that the concepts 'multiple use' and 'sustained yield' are inappropriate for ORV activity. That is, any plan to accommodate ORV use must be recognized as one that permits an exclusive and consumptive use, which is disruptive to other recreationists and which destroys resources in or near its path." The State SVRAs are examples of segregated areas used for OHV activities.

A. E. K. Nash, in his article "Nature Aesthetics, The Public Interest, And ORV User's Perspective," states that OHV user habits cause other users and land managers to characterize this use as first impairing the recreational experience of other recreationists; next, suppressing to a critical extent the benefits derived by these other recreationists; and finally, displacing them from the site. He is concerned that in framing and implementing ORV use policies not enough attention is given to the socio-psychological costs and benefits. While public interest may lie in ecological concerns, it does not lie in preferring one recreation group's value system over another. Research indicates that value systems influence people's likes or dislikes of ORV as much or more than environmental concerns even when environmental concerns are the reasons given for opposing ORV use.

In the Tennessee Valley Authority Land Between the Lakes forests, ORVs are confined to 2,350 acres of the 170,000 acre area on the theory that it is far superior to have people in an area of relatively stable soils that is already heavily used and where they can be handled, rather than spread out on more erodible soils where they conflict with horseback riders, hunters, and hikers. (P. K. McKnelly, Turkey Bay Off-Road Vehicle Area: Its Use and Monitoring System).

Calvin W. Dunnell, in his article "Protecting and Rehabilitating ORV Use Areas," discusses management of the Taenum - Menastash area of the Wenatchee National Forest. In managing the area, the forest incorporated design features such as hardening sites with concrete blocks, turnpiking through wet areas, bridging streams, and relocating trails around problem areas. Rehabilitation measures included barriers, signing, seeding and fertilizing. Management tools used included seasonal closures for wildlife and erosion control, closing roads around ORV campgrounds to provide for juvenile riders, and utilizing rock pits for juvenile play areas.

The Forest Service National OHV Activity Review in 1987 noted that with few exceptions the uncontrolled cross-country or areawide use of OHVs leads to unacceptable resource damage and is inappropriate on the National Forests. Hill climbs and motor-cross courses also fall into this category. Where use is confined to designated roads and trails, a variety of quality experiences can be provided with minimal resource damage. A key ingredient to managing OHV use is providing a system of loop roads and trails that have varying levels of difficulty and riding times, and are laid out in a manner to protect the resources. It is imperative that these facilities be in place and functioning prior to any attempt to control undesirable use or the undesirable use will merely move elsewhere.

Joe Wernex, in his guide to trail construction, states "perhaps the most important thing I have learned is the fact that nothing government agencies can do will go further toward managing trailbike use than developing adequate mileage of high-quality trails. After many years of firsthand experience, it is my belief that no amount of restriction or enforcement can begin to provide the environmental protection achieved through provision of adequate facilities and rider education. When quality trails are built riders will use them. When riders use developed trails, environmental impact can be designed for, monitored, and controlled. The key is quality, adequate mileage and competent design." To be successful, a trail must satisfy the user, provide adequate environmental protection and be developed in a cost-effective manner.

The Los Padres National Forest has had some success in developing trails satisfying to the user and safe and sound from an environmental point of view. (Michael J. Major, November 1987, Journal of Forestry).

Administration and Law Enforcement

The Forest Service National OHV Activity Review in 1987 noted there is a need to establish a policy regarding the mixing of vehicles unlicensed for highway use with highway vehicles. The Forest Service should seek to reduce concurrent use of a road facility by OHVs and highway vehicles, and where possible, provide for dual facilities to avoid mixing traffic. Where concurrent use is allowed, liability-risk should be assessed and practices prescribed that must be followed.

Existing literature recognizes that law enforcement is not practical unless administrators are riding vehicles similar to the users. Enforcement by patrol cars is not effective. There is a need to concentrate patrols, contact as many users as possible, centralize communications and cooperate with adjacent agencies. Officers must be able to relate to users and non-users on a logical and reasonable level: providing information, building rapport, and encouraging self-policing. (Kochelman)

Education

Education leads to willing compliance. Education should inform users where and under what conditions OHVs can be used. Major emphasis should be on providing the public with adequate information about OHV policy for clear understanding of the rules and regulations and the reasons for the policy. Education should

lead to a positive attitude and respect for the rights of others and an appreciation of natural resources. (Kochelman)

Overview

William J. Kochelman advocates "A management approach combining education, regulation and facilities specifically designed for the exclusive use of ORV's will give the ORV user a safer and more satisfying experience, minimize resource destruction and reduce non-ORV user conflicts."

A Forest Service National OHV Activity Review in 1987 lists three key factors in achieving successful OHV management. They are:

1. Comprehensive project level planning that:

    a. Integrates on-road and off-road travel;
    b. Provides for loop routes of varying length and difficulty;
    c. Incorporates control measures such as fencing and rehabilitation measures for presently disturbed areas.

2. Comprehensive user information and education programs.

3. A Forest Service presence during high use periods--typically the weekend. This includes appropriate application of law enforcement for the problems experienced.

III. METHODOLOGY

The information collected for this project was gathered from four sources: Motorcycle Industry Council Statistical Reports and Surveys, literature review, experiences on the San Bernardino National Forest, and discussions with other individuals.

Motorcycle Industry Council Statistical Reports were analyzed in order to estimate trends in ATV and trailbike use. Numbers of vehicles sold were plotted and based on the apparent trends, they were extrapolated to 1992. In order to determine the effect this would have on total vehicles in use, MIC operability rates were used to determine the change in numbers in use between 1987 and 1992. Calculations and graphs are included in the appendix.

A literature review and analysis was made to explore methods of managing ATVs and trailbikes that had been tried elsewhere. Westfornet provided a literature search of articles on OHV and copies of those that appeared applicable were obtained and reviewed.

Interviews were conducted with forest users, persons from Motorcycle Industry Council, Specialty Vehicle Council, American Motorcycle Association, Bureau of Land Management and Forest Service.

IV. DISCUSSION

New sales of ATVs and trailbikes are estimated to continue to fall in 1988, then slightly decline or level off. Total vehicles in use are expected to fall less dramatically because of existing usable machines from prior years. Total vehicles in use in 1992 are estimated to be about 15 percent below current figures (see appendix for calculations). OHV use on the San Bernardino National Forest, however, is expected to remain relatively constant because of anticipated closures of currently used riding areas outside the National Forest and the attraction of new trails on the forest. Therefore, the OHV system designated for vehicles not licensed for highway use will need to handle current use through 1992. Use after 1992 will probably show a slight decline until the recent upturn in number of births shows up in the age brackets most likely to takeup this activity (teens and young adults).

Executive Orders 11644 and 11989 and 36 Code of Federal Regulations 295 require that all National Forest System land be classified for OHV use as Open, Closed or Limited Use. There are open areas on BLM lands in the desert, State SVRAs and the Angeles National Forest. These are generally large areas except for the Angeles National Forest, which has some small areas below the high water level of reservoirs. The terrain, soils, vegetation and private land mix on the San Bernardino National Forest do not lend itself to the creation of open areas. Users of the forest have indicated a preference for trail riding. There was almost no support for the one open area proposed in the Draft Land and Resources Management Plan. It is not possible to meet all the different expectations of trailbike and ATV users on the San Bernardino National Forest. The main goal should be to provide a meaningful trail network and refer users desiring other experiences to other OHV areas. Lands should be designated either limited use on designated routes or closed to OHVs.

Experience on the Arrowhead Ranger District indicates that if trails are constructed which meet user expectations, taking advantage of natural barriers and special design features, users will stay on the trails. If designed by persons familiar with both ATV and trailbike use, they can accommodate both uses and still provide a satisfying experience, although not providing trails in the "most difficult" classification for trailbikes. On the other hand, where challenging trails are not provided and OHVs are allowed to use roads designed for regular or fire vehicles, users do not remain on the roads and cause considerable resource damage. The Los Padres National Forest has also found it possible to manage a trailbike network within a National Forest. This experience leads me to conclude that, contrary to much of the earlier literature, it is feasible to construct a trail network which will satisfy the ATV and trailbike user, protect the environment and be manageable.

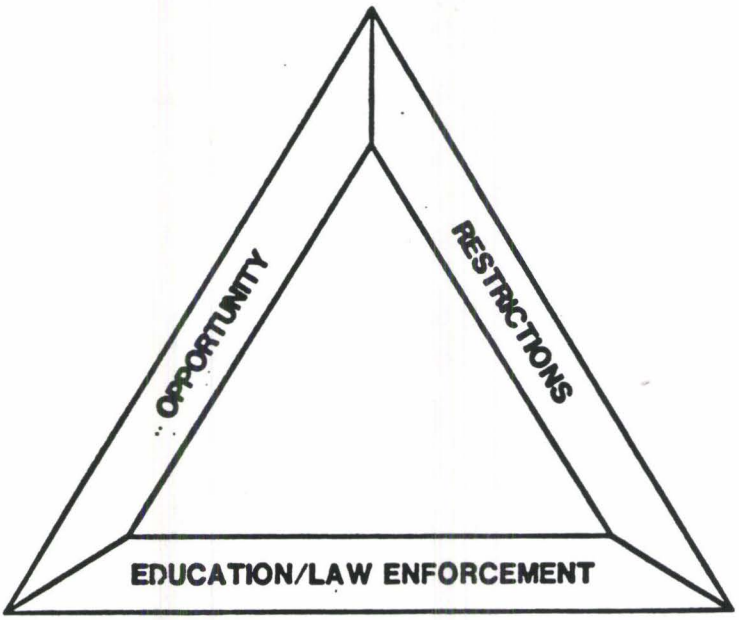
Philosophy

Most Forest Service employees come from a resource background, not a socio-psychological background. As a result, the agency has historically looked at resource objectives first, then fit in whatever recreation needs could be met. Emerging uses are generally resisted since they create new "problems" for resource managers. The agency has a strong bias that the more

traditional or oldest uses of the forest are more appropriate, therefore does not always respond to new public issues in an open and positive manner. Traditional values are pushed, consequently much of the Forest Service efforts at education are perceived by the public as propaganda. There is a need to look at changing public needs and desires to see what current societal needs can be met while still protecting basic resources. This requires focusing on the recreating public's needs while retaining a basic land ethic.

The best philosophy for managing OHVs on public lands is one which recognizes our responsibility to maintain the long-range productivity of the land for future generations while still allowing the current generation the maximum utilization and enjoyment of the land and resources. This is consistent with the Forest Service mission of caring for the land and serving people. This is also the most difficult to implement and achieve in practice.

This philosophy can best be illustrated by a triangle.



The first leg of the triangle is <u>OPPORTUNITY</u>. Law enforcement is effective only when voluntary compliance is gained from the bulk of the public. The 55 mile per hour speed limit was effectively enforced during the height of the energy crisis. People were waiting in line for an hour to buy gas and predictions of two to three dollars per gallon were common. When gas prices dropped to eighty cents per gallon and gas was in good supply, it became impossible to enforce, especially along rural highways. Users did not accept the law as reasonable and rebelled. User needs and desires need to be taken in account and reasonable opportunities provided in order to gain support and voluntary compliance. Therefore, the first step is to provide opportunities that are easier to manage, are easier on the land and reduce conflicts with other users to substitute for the activities that will be shut down. Otherwise, the problem will simply move to another location.

The second leg of the triangle is **RESTRICTION**. Some areas of land are too sensitive to allow OHV use at any time, for example archeological sites, threatened and endangered species habitat, and residential areas. Other areas may need seasonal restrictions for such periods as the fawning season or fire season. Still others may need some type of vehicle restrictions for safety, experience, etc. Regulations need to dictate the types, kinds and periods of use.

The third leg of the triangle is **EDUCATION AND LAW ENFORCEMENT**. Many of the users of ATVs and trailbikes are urban dwellers with little or no knowledge of their impact on the natural resources of the area. They are not members of any organized user group. They may not have had any exposure to the proper use of wildlands until the lack of opportunities to use their new toy in the urban community forced them into the mountains. Education in the proper use of their equipment is essential to protect our resources. Education is not the answer, however, if it is not backed up by law enforcement. A certain percentage of people engaged in any activity do their own thing regardless of the negative effect on other people or resources. Law enforcement, appropriate to the situation, is necessary to reinforce education and control this element.

As with the fire triangle from which this analogy was drawn, if one leg of the triangle is missing, effective OHV management is not possible.

Recommendations

The following action should be used on the San Bernardino National Forest:

A. Provide for an integrated OHV trail system designed to meet user expectations for an OHV experience requiring a forest environment.

1. The trail network must be interesting and provide for both short trail rides for families and users who want an experience centered around one area and longer trail rides for those wishing to travel greater distances.

2. Trails must be challenging and designed to encourage users to remain on the designated trails.

3. Warm-up trails (less than 1/2 mile) should be provided in conjunction with staging areas. These trails incorporate a wide variety of experiences to allow trail riders to check their machines before leaving on long rides. By removing large obstacles and avoiding steep side slopes, these trails can also provide the opportunity for novice riders to practice with a reduced exposure to injury.

4. Routing of trails must avoid sensitive areas wherever possible. If a trail must pass through such an area extra protection measures and mitigation must be designed into the trail.

5. The involvement of engineering skills in trail construction, reconstruction and maintenance is necessary to avoid design and long-term maintenance problems. However, there also is a need to

provide meaningful riding experiences and to avoid inappropriately high design standards and excessive planning costs. This is possible when personnel responsible for the design and construction of trails are familiar with appropriate design standards for OHV trails and are either users themselves or are familiar with the experiences users desire.

6. The trail system should be coordinated with the Statewide Trail System and adjacent land management agencies (BLM and ANF).

B. Protect basic resources of the land and minimize conflicts with other forest users.

1. Roads that are not incorporated into this trail system must be closed to ATVs and trailbikes not authorized for highway use.

2. OHV management and other resource activities must be coordinated to minimize conflicts.

3. No open areas should be provided.

4. No speed events should be authorized.

5. Trail design should take maximum advantage of natural barriers.

6. Protection and rehabilitation of newly damaged areas should begin upon discovery. Rehabilitation of older damaged areas should occur concurrently with construction of new trail opportunities.

C. Provide an appropriate level of administration and law enforcement

1. Consistency with State law is important. OHV users should be treated consistently, regardless of road jurisdiction. Establish clearly defined roles and responsibilities with State and local law enforcement agencies.

2. A Forest Service presence in an area and appropriate law enforcement is essential. This is especially important when initiating a change in use patterns.

3. Forest Officers charged with administering the program must be knowledgeable and proficient in the use of ATVs or trailbikes and use them to contact users.

4. Use of National Forests by OHVs can be successfully controlled through a combination of fencing, rehabilitation and patrol. Protection measures must be maintained in good condition. Repairs should be undertaken immediately. Temporary closures may be necessary to protect resources until long term measures can be implemented.

5. Adequate signing must accompany all trails.

6. Cooperation and support from user groups is an essential element in helping to manage OHV use. Enlist the assistance of users in the operation and maintenance of OHV trails through volunteer programs such as the Host Program and Adopt-a-Trail.

D. Educate users in the proper use of OHVs in a forest environment in order to protect our natural resources. Education is not just telling -- it is two way communication involving the minds, emotions and physical beings of the participants.

1. On the forest:

a. Establish volunteer Host patrols.
b. Use entry stations and bulletin boards at staging areas to provide information to the user.
c. Provide for Forest Service personnel and volunteer hosts in the field contacting users and being good hosts.
d. Use good signing techniques. Maintain good quality, positive, vandal resistant signs.
e. Use task forces in the field to educate the public when significant policy changes are made.

2. Prior to visiting the forest:

a. Provide information through local dealers.
b. Use local stores frequented by OHV visitors
c. Adopt the "Tread Lightly Program" and adapt it to the types of uses occurring on the San Bernardino National Forest.
d. Provide travel and visitor maps that are uncluttered, consistent with conditions on the ground, and complete.
e. Extend office hours on the weekends and in high-use periods.
f. Utilize ad hoc groups composed of both users and non-users to address sensitive issues and provide recommendations for modifications of the Forest OHV Plan.
g. Coordinate with Motorcycle Industry Council to put together a package for magazines or dealers.
h. Provide information at trade shows and OHV conventions.

Implementation

The Land and Resource Management Plan for the San Bernardino National Forest will make basic land allocations. The implementation planning process should be careful not to expand into larger issues that re-open these basic allocations. Public involvement in project environmental assessments needs to address the facility question, not the allocation questions already made in the Plan. This can be handled through the correct application of the scoping process and documentation of why the larger issues are not addressed. This needs to be made clear to the public.

Develop and conduct workshops that address special problems associated with OHV management. Mediation and problem solving should be used to gain agreement. However, once an unresolvable impass develops, continued analysis over a long

period of time generally contributes to worsening of conflict rather than resolution. It is best to move quickly to a decision and follow through with implementation of the decision.

Staying in tune to the OHV user needs is important to good management. Organized users are very interested in the prevention of resource damage because they understand that the availability of future opportunities depends upon good management and responsible riding. Maintain a continuing dialog with OHV user organizations.

The State Green Sticker Program provides a source of funding to implement this proposal during a period of time when sufficient federal funding is not available to accomplish the program. Plan a multi-year program to utilize this fund to provide for and administer new opportunities and to rehabilitate OHV damaged areas. New construction should be planned on a schedule that aggressively moves to provide needed opportunities yet does not over-extend the Forest's capability to construct and incorporate these trails into the trail system in an environmentally sound manner.

Volunteers are an excellent means not only to assist in maintenance (Adopt-a-Trail) but also to help in the education of users. The Motorcycle Industry Council could put together a package with Cycle News and the American Motorcycle Association to announce volunteer projects. Good volunteer hosts can go a long way toward getting voluntary compliance from users. Retirees could be utilized to organize volunteers.

Modify other resource activities to reduce potential conflicts with OHVs. When planning other resource activities remember the old adage "Out of sight-Out of mind".

1. Plantations: clearing vegetation to the edge of an OHV route tempts users to leave the route and "play" in the open area. When this occurs trees are destroyed and a continuing law enforcement problem is created. Leave a buffer strip between plantations and existing OHV routes. The loss in plantation acreage is off-set by better tree survival and reduced maintenance.

   This technique is also useful when putting a fuelbreak along an OHV Route. The slight loss of effectiveness is more than off-set by the benefits of keeping OHV users on designated routes.

2. Firebreaks: when a firebreak crosses an OHV route it appears to the user as another route beckoning them. Leave a small gap in firebreaks where they cross OHV routes to avoid the temptation for users to explore these other "routes". These small gaps can be quickly cleared in the event they are needed in fire suppression.

3. Fire Suppression: suppression activities often destroy natural and manmade barriers to OHVs. Tractor lines are constructed opening up areas previously inaccessible to users. These lines are not designed for OHVs and are rarely suitable for permanent use as an OHV route. Rehabilitate damaged OHV barriers before the fire area is reopened to the public. This can be done through various means: brush piling, fencing, placement of rocks.

4. Timber Sales: commercial sales open up the forest making it more accessible to OHVs. New roads may be constructed; skid trails are created; and trees, brush and other types of ground cover are removed during logging operations. OHV control measures should be part of the logging plan. Upon completion of the sale, skid trails should be blocked with slash at road landings and reseeded. It may be necessary to close timber sale access roads for a few years to allow natural OHV barriers to recover and skid trails to fade away.

5. Firewood gathering: this activity can start new routes as fuelwood permittees search for firewood away from roads. Permittees' vehicles should be restricted to Forest system roads unless their permit authorizes the removal of a specifically marked tree. In this case the access should be predetermined and evidence of the accessway obliterated following removal of the tree.

6. Dispersed Camping: this activity often creates tire tracks leaving the regular transportation system. When OHV users see these tracks, they are tempted to explore them. Areas adjacent to OHV routes should be closed to dispersed camping. Overnight camping can be provided at staging areas. In other areas of the forest, dispersed campers should be allowed to pull their vehicles off the regular transportation system roads for safety. This distance would normally not exceed 25 feet.

Monitoring

OHV activities and impacts on other resources should be continuously monitored and action taken immediately to correct unacceptable behavior or damage to resources.

1. User/Non-user concerns and expectations should be monitored to identify new issues or problems as they arise. They should not be allowed to fester until resolution is all but impossible.

   a. Maintain a file for public comments and agency responses. Periodically review for trends and emerging issues.

2. Set up check points to monitor soil movement.

3. Monitor the amount of illegal activity that is occurring and the degree of damage that results.

4. Monitor changes in wildlife habitat and usage particularly in sensitive areas such as riparian zones.

Conclusion

ATV and trailbike use in the San Bernardino National Forest can be effectively managed by following a management philosophy that provides opportunities OHV users expect in a forested environment, restricts OHV use in sensitive areas or areas where use cannot be adequately controlled, and educates the user in the proper use of OHVs.

Cooperation and support of the OHV community is a necessary ingredient of an effective OHV management program. User involvement in workshops to resolve conflicts with other user groups and the utilization of cooperative efforts such as Adopt-a Trail and the Volunteer Host Program will go a long way toward building this support.

Other resource activities have the potential to effect OHV management in a positive or negative manner. A successful OHV program requires the efforts of all resource managers not just the recreation staff.

BIBLIOGRAPHY (LITERATURE CITED)

Berry, Kristin H. **A Review of the Effects of Off-Road Vehicles on Birds and Other Vertibrates.** In USDA Forest Service General Technical Report, Intermountain Forest and Range Experiment Station. September, 1980

Bury, R.B. **What We Know And What We Do Not Know About Off-Road Vehicle Impacts On Wildlife** In Off-Road Vehicle Use: A Management Challenge edited by Richard N.L. Andrews and Paul F. Novak. 1980 University of Michigan.

California, State of **Recreation Needs in California.** February 1982 Report To The Legislature On Statewide Recreation Needs Analysis.

Dunnell, C.W. **Protecting And Rehabilitating ORV Use Areas** In Off-Road Vehicle Use: A Management Challenge edited by Richard N.L. Andrews and Paul F. Novak. 1980 University of Michigan.

EDAW, Inc. **Statewide Off-Highway Motor Vehicle Recreational Trails Plan.** May 1983 draft California Department of Parks and Recreation

Kockelman, William J. **Management Concepts, Management Practices, and Regulations and Education** In Environmental Effects of Off Road Vehicles: Impacts and Management in Arid Regions. edited by R.H. Webb and H.G. Wilshire 1983 Springer-Verlag, New York Inc.

Majors, Michael J. **Managing Off-The-Road Vehicles.** November 1987 Journal of Forestry.

McKnelly,P.K. **Turkey Bay Off-Road Vehicle Area: Its Use And Monitoring System** In Off-Road Vehicle Use: A Management Challenge edited by Richard N.L. Andrews and Paul F. Novak. 1980 University of Michigan.

Motorcycle Industry Council, Inc. **Motorcycle Statistical Annual.** 1980 through 1987. Motorcycle Industry Council, Costa Mesa, CA.

Motorcycle Industry Council, Inc. **The MIC 1985 ATV Owner Survey** - Research Report RRH 86-002. April 11, 1986. Motorcycle Industry Council, Costa Mesa, CA.

Motorcycle Industry Council, Inc. **1985 Survey of Motorcycle Ownership and Usage Appendix** - Research Report RRH 86-006-G. August 8, 1986. Motorcycle Industry Council, Costa Mesa, CA.

Motorcycle Industry council, Inc. **1985 Survey of Motorcycle Ownership and Usage Part V. Off-Highway Usage** - Research Report RRH 86-006-E. December 12, 1986. Motorcycle Industry Council, Costa Mesa, CA.

Motorcycle Industry Council, Inc. **The Changing Motorcycle Market 1980-1985.** January 1987. Motorcycle Industry Council, Costa Mesa, CA

Motorcycle Industry Council, Inc. **Research Report RRH 87-005.** March 13, 1987. Motorcycle Industry Council, Costa Mesa, CA.

Nash, A.E.K. **Nature Aesthetics, The Public Interest, And ORV User's Perspectives** In Off-Road Vehicle Use: A Management Challenge edited by Richard N.L. Andrews and Paul F. Novak. 1980 University of Michigan.

Nicholes, G.E. **Off-Road Vehicle Trends.** Paper for the 1980 National Outdoor Recreation Trends Symposium, University of New Hampshire.

Shay, Russell **ORV's - A Nonuser Perspective** In Off-Road Vehicle Use: A Management Challenge edited by Richard N.L. Andrews and Paul F. Novak. 1980 University of Michigan.

State of California. **Off Highway Vehicles Currently Registered 27 Feb 1987.** Department of Transportation, State of California.

U.S. Forest Service. **National ORV Activity Review Report.** 1986. U.S. Forest Service, Washington, D.C.

Waldeim, Ed **Families In Off-Roading** December 1987 CORVA NEWS

Wernex, Joe **Guide To Off-Road Motorcycle Trail Design and Construction.** 1984 American Motorcycle Association

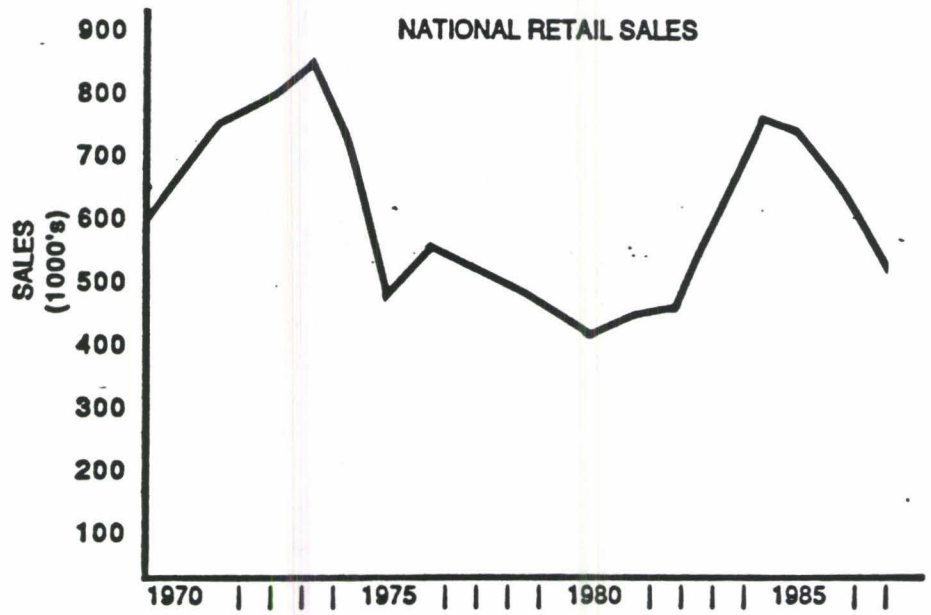
APPENDIX

MIC STATISTICS	A-1
USE ESTIMATES	A-3
GREENSTICKER GRANTS	A-5

NATIONAL RETAIL SALES
(Thousands)

	Total	OHMC	Dual	ATV	%ATV
70	677	199	478		
71	768	226	542		
72	796	233	563		
73	865	292	573		
74	711	244	467		
75	489	247	242		
76	559	260	299		
77	512	283	229		
78	493	326	167	*	
79	479	332	147	*	
80	416	313	103	*	
81	451	370	81	*	
82	470	165	55	250	53.2
83	635	155	55	425	66.9
84	755	150	55	550	72.8
85	740	145	45	550	74.3
86	620	125	30	465	75.0
87	522	100	27	395	75.7

*ATV's were lumped with OHMC prior to 1982.



OFF-HIGHWAY VEHICLES IN USE-NATIONALLY*
(Thousands)

	Total	ATV	OHMC	%ATV
80	3,944			
81	3,786			
82	3,585			
83	3,613	1,100	2,513	30.4
84	3,815	1,500	2,315	39.3
85	4,076	2,000	2,76	49.1
86	4,125	2,300	1,825	55.8
87	3,900	2,475	1,425	63.5

* Off-highway vehicles in use include highway motorcycles used off-highway sometimes.

OHVS REGISTERED IN CALIFORNIA - FEB. 1987
(Thousands)

	ACTIVE			INACTIVE		
	MC	ATV	Total	MC	ATV	Total
LA	55.7	22.8	78.5	32.2	13.9	46.1
OR	26.0	9.6	35.6	14.9	5.5	20.4
RIV	12.3	6.1	18.4	7.2	4.3	11.5
S.B.	17.0	9.2	26.2	10.0	6.2	16.2
S.C.	111.0	47.7	158.7	64.3	29.9	94.2
STATE	223.3	106.4	329.7	134.1	70.7	204.9

The four Southern California Counties listed equal 48.1% of the active OHVs and 46.0% of the inactive OHVs.

CALCULATIONS OF OFF-HIGHWAY VEHICLES IN USE FOR 1986-87
(Based On MIC Statistics - Thousands)

	1986 OP RATE* OHMC-ATV	COMB	SALES	1986 IN USE	1987 IN USE	RETIRED
87					514	8
86	97-99	98.5	620	611	591	20
85	90-97	95.1	740	704	667	37
84	82-93	90.0	755	680	611	69
83	70-85	80.0	635	508	441	67
82	58-75	67.0	470	315	264	51
81	46-65	50.2	451	226	162	64
80	32-50	34.2	416	142	76	66
79	16-35	17.0	479	81	50	31
78	10-20	10.0	493	49	25	24
77	5-5	5.0	512	26	10	16
76	2-2	2	559	11	6	5
75	1-0	1	489	5	-	5
PRIOR TO 75				294	294	
				3652	3709	463

	1987			
87	97-99	98.4	522	514
86	90-97	95.3	620	591
85	82-93	90.2	740	667
84	70-85	80.9	755	611
83	58-75	69.4	635	441
82	46-65	56.1	470	264
81	32-50	36.0	451	162
80	16-35	18.3	416	76
79	10-20	10.5	479	50
78	5-5	5.0	493	25
77	2-2	2.0	512	10
76	1-0	1.0	559	6
PRIOR TO 1976				294
TOTAL IN USE				3709

*The operating rate for OH vehicles differs from MIC figures in the way dual purpose and highway vehicles used off highway are treated. For this analysis dual purpose bikes were lumped with OH bikes and OH use rates used for both. Highway bikes used off road were not considered since forest use is negligible.

VEHICLES IN USE 1988-1992
(Thousands)

	1988					1992			
	Sales	OP Rate* OH-ATV	% ATV	OP Comb	In Use	OP Rate* OH-ATV	% ATV	OP Comb	In Use
92	417					97-99	75.0	98.5	411
91	421					90-97	75.0	95.3	401
90	430					82-93	75.0	90.3	388
89	444					70-85	75.5	81.3	361
88	464	97-99	76.0	98.5	457	58-75	76.0	70.9	329
87	522	90-97	75.6	95.3	497	46-65	75.6	60.4	315
86	620	82-93	75.0	90.3	560	32-50	75.0	45.5	282
85	740	70-85	74.3	81.2	601	16-35	74.3	30.1	223
84	755	58-75	72.8	70.4	632	10-20	72.8	17.3	131
83	635	46-65	66.9	58.7	373	5-5	66.9	5.0	32
82	470	32-50	53.2	41.6	196	2-2	53.2	2.0	9
81	451	16-35	22.1	20.2	92	1-0	22.1	1.0	5
80	416	10-20	12.0	11.4	47	PRIOR to 1981			294
79	479	5-5	5.2	5.0	24				
78	493	2-2	0	2.0	10				
77	512	1-0	0	1.0	5				
PRIOR to 1977					294				
TOTAL IN USE - 1988					3688	TOTAL IN USE - 1992			3181

* The operating rate for OH vehicles differs from MIC figures in the way dual purpose and highway vehicles used off highway are treated. For this analysis dual purpose bikes were lumped with OH bikes and OH use rates used for both. Highway bikes used off road were not considered since forest use is negligible.

The drop from the peak use in 1987 (3709) to 1992 (3181) is 14.2%.

GREENSTICKER GRANTS TO THE SAN BERNARDINO NATIONAL FOREST

1982-3	$83,000
1984-5	66,000
1985-6	30,660
1986-7	236,000
1987-8	266,000
	$755,660